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EXAMINER	
SHEDRICK, CHARLES TERRELL	
ART UNIT	PAPER NUMBER
2617	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/576,831	KIM ET AL.	
	Examiner	Art Unit	
	CHARLES SHEDRICK	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 September 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,6-9,13-16 and 18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6-9,13-16 and 18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 2, 6, **and 18** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Ito US Patent No.: 6,108,856 in view of Macdonald et al. US Patent Pub. No.: 2004/0152471 A1, hereinafter, "Macdonald"**

Consider **claim 1,** Ito teaches a system and method of determining a position of a mobile communication device in a mobile communication network including a plurality of base stations, comprising the steps of: dividing an area covered by the mobile communication network into a plurality of grids and collecting a first base station signal information with respect to each of the divided grids **(e.g., see abstract, col. 3 lines 40-43, col. 5 lines 55-60, col. 6 lines 1-15 and col. 10 lines 42-59 and figure 1**); storing and maintaining the collected first base station signal information in association with a first position information of the grids in a database **(e.g., col. 1 lines 34-58, col. 3 lines 11-24, col. 4 lines 20-22, col. 6 lines 54-col. 7 line 4**); measuring a second base station signal information received by the mobile communication device **(col. 3 lines 39-56, col. 4 lines 31-36, col. 5 line 61 – col. 6 line 5, and col. 7 line 40-col. 8 line 7**); comparing the second base station signal information with the first base station signal information to find position information corresponding to the second base station signal information in the database**(col. 6 lines 11-15 and col. 8 lines 11-12**); and generating final position information of the mobile communication device based on the position information found in the database **(e.g., see abstract, col. 3 lines 54-55, col. 4 lines 50-58 and col. 8 lines 23-25 and claim 1)**.

However, Ito does not teach determining second position information by a predetermined second position determination method; measuring a second base station signal information received by a second mobile communication device with respect to the second position

information; and updating the first base station signal information stored in the database based on the measured second base station signal information; measuring a third base station base station signal information received by a second mobile communication device; comparing the third base station signal information with the first base station signal information to find position information corresponding to the first base station signal information in the database.

In analogous art, MacDonald teaches determining second position information by a predetermined second position determination method **(i.e., see at least paragraph 0099)**, measuring a second base station signal information received by a second mobile communication device with respect to the second position information**(e.g., see at least paragraphs 0072, 0092-0098 RSS values**); updating the first base station signal information stored in the database based on the measured second base station signal information(i.e., the measurements are gathered as the mobile device moves within the same zone**(e.g., see at least paragraphs 0091-0093)**);measuring a third base station base station signal information received by a second mobile communication device**(e.g., see at least paragraphs 0072,0092-0098 RSS)(i.e., mobile stations are using the signal measurements provided by other mobile device measurements and updated**); comparing the third base station signal information with the first base station signal information to find position information corresponding to the first base station signal information in the database**(e.g., see at least paragraphs 0072, 0092-0098 RSS values**).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Ito to include the modifications noted above for the purpose of improving accuracy as noted by Macdonald in at least paragraph 0011.

Consider **claim 2 and as applied to claim 1**, Ito teaches the claimed invention except wherein the first base station signal information includes at least one of pseudo-random noise phase, pseudo-random noise offset, pseudo-random noise phase delay, and pseudo-random noise strength.

However, in analogous art, Macdonald teaches wherein the first base station signal information includes at least one of pseudo-random noise phase, pseudo-random noise offset, pseudo-random noise phase delay, and pseudo-random noise strength (**e.g., see at least paragraph 0109 CDMA RSS**).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Ito to include wherein the first base station signal information includes at least one of pseudo-random noise phase, pseudo-random noise offset, pseudo-random noise phase delay, and pseudo-random noise strength for the purpose of determining position information as taught by Macdonald.

Consider **claim 6 and as applied to claim 5**, Ito teaches the claimed invention except wherein the second position determination method is performed by a GPS receiving device.

However, in analogous art, Macdonald teaches GPS (**e.g., see at least paragraph 0081**).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Ito to include GPS for the purpose of determining position information as taught by Macdonald.

Consider **claim 18**, Ito as modified by Macdonald teaches a computer readable recording medium in which a program for executing the method of claim 1 is recorded **(i.e., the programmable hardware of the system)(col. 2 lines 63-65)**

Claims **3, 8-9 and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Ito US Patent No.: 6,108,856 of in view of Macdonald et al. US Patent Pub. No.: 2004/0152471 A1, hereinafter, "Macdonald" and further in view Kimura et al. US Patent Pub. No.: 2003/0143994 A1, hereinafter, "Kimura"**

Consider **claims 13**, Ito teaches a method of determining a position of a region name or lot number to which a mobile communication device belongs **(e.g., see col. 4 lines 50-58)**, comprising the steps of: collecting first base station signal information with respect to each region name or lot number**(e.g., see abstract, col. 3 lines 40-43, col. 5 lines 55-60, col. 6 lines 1-15 and col. 10 lines 42-59 and figure 1)**; storing and maintaining the collected first base station signal information in association with identification information of the region name or lot number in a pattern matching database**(e.g., col. 1 lines 34-58, col. 3 lines 11-24, col. 4 lines 20-22, col. 6 lines 54-col. 7 line 4)(i.e., based on a characteristic signal)**; measuring second base station signal information received by the mobile communication device**(col. 3 lines 39-56, col. 4 lines 31-36, col. 5 line 61 – col. 6 line 5, and col. 7 line 40-col. 8 line 7)**; searching the pattern matching database by the second base station signal information to find a base station set similar to the second base station signal information**(e.g., see at least col. 6 lines 10-15, and claims 1-3)**; and determining a position of a region name or lot number corresponding to the found base station set as the position of the a region name or lot number to which the mobile communication device belongs in the case the property of the second base station signal

information is corresponding to a predetermined property range of the found base station set(**e.g., see abstract, col. 3 lines 54-55, col. 4 lines 50-58 and col. 8 lines 23-25 and claim 1**).

However, Ito does not teach determining second position information by a predetermined second position determination method; measuring a second base station signal information received by a second mobile communication device with respect to the second position information; and updating the first base station signal information stored in the database based on the measured second base station signal information; measuring a third base station base station signal information received by a second mobile communication device; comparing the third base station signal information with the first base station signal information to find position information corresponding to the first base station signal information in the database.

In analogous art, MacDonald teaches determining second position information by a predetermined second position determination method (**i.e., see at least paragraph 0099**), measuring a second base station signal information received by a second mobile communication device with respect to the second position information(**e.g., see at least paragraphs 0072, 0092-0098 RSS values**); updating the first base station signal information stored in the database based on the measured second base station signal information(i.e., the measurements are gathered as the mobile device moves within the same zone(**e.g., see at least paragraphs 0091-0093)**);measuring a third base station base station signal information received by a second mobile communication device(**e.g., see at least paragraphs 0072,0092-0098 RSS)(i.e., mobile stations are using the signal measurements provided by other mobile device measurements and updated**); comparing the third base station signal information with the first base station signal

information to find position information corresponding to the first base station signal information in the database(**e.g., see at least paragraphs 0072, 0092-0098 RSS values**).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Ito to include the modifications noted above for the purpose of improving accuracy as noted by Macdonald in at least paragraph 0011.

However, Ito as modified by Macdonald does not specifically teach a position of a Building.

In analogous art, Kimura teaches determining a building location (**e.g., see at least paragraph 0235**).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Ito as modified by Macdonald to include determining the location of a building for the purpose of determining the location of user in the building as taught by Kimura.

Consider **claim 3 and as applied to claim 1**, Ito as modified by Macdonald teaches the claimed invention except wherein the grids are three-dimensionally divided, the position information includes altitude information, and the first base station signal information varies with the altitude information.

However, in analogous art, Kimura teaches three-dimensionally, the position information includes altitude information, and the first base station signal information varies with the altitude information (**e.g., see paragraph 0235**).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Ito as modified by Macdonald to include the grids are three-

dimensionally divided, the position information includes altitude information, and the first base station signal information varies with the altitude information for the purpose of determining the location of user in the building as taught by Kimura.

Consider **claims 8 and 9 as applied to claim 1**, Ito as modified by Macdonald teaches the claimed invention except wherein the grids are divided according to the inside and outside of a building and a story of the building.

However, in analogous art, Kimura teaches wherein the grids are divided according to the inside and outside of a building and a story of the building **(e.g., see paragraph 0235)**.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Ito as modified by Macdonald to include wherein the grids are divided according to the inside and outside of a building and a story of the building for the purpose of determining the location of user in the building as taught by Kimura.

Claims **4, 14-15** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Ito US Patent No.: 6,108,856 in view of Macdonald et al. US Patent Pub. No.: 2004/0152471 A1, hereinafter, "Macdonald" and further Kimura et al. US Patent Pub. No.: 2003/0143994 A1, hereinafter, "Kimura" and further in view of Hunzinger US Patent Pub. No.: 2002/0025822.**

Consider **claim 4 and as applied to claim 3**, Ito as modified by Macdonald and further modified by Kimura teaches the claimed invention except wherein the altitude information is determined based on relative phase difference of the pseudo-random noise offsets with respect to the plurality of base stations.

However, in analogous art, Hunzinger teaches relative phase difference of the pseudo-random noise offsets with respect to the plurality of base stations (**e.g., see at least abstract and paragraphs 0005 and 0018-0020**).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Ito as modified Macdonald and further modified by Kimura to include relative phase difference of the pseudo-random noise offsets with respect to the plurality of base stations for the purpose of determining position information as taught by Hunzinger.

Consider **claim 14 and as applied to claim 13**, Ito as modified by Macdonald and further modified by Kimura teaches the claimed invention except wherein the predetermined property range of the base station set includes a pseudo-random noise phase delay range and a pseudo-random noise strength range.

However, in analogous art, Hunzinger teaches wherein the predetermined property range of the base station set includes a pseudo-random noise phase delay range and a pseudo-random noise strength range (**e.g., see at least abstract and paragraphs 0005 and 0018-0020**).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Ito as modified by Macdonald and further modified by Kimura to include wherein the predetermined property range of the base station set includes a pseudo-random noise phase delay range and a pseudo-random noise strength range for the purpose of determining position information as taught by Hunzinger.

Consider **claim 15 and as applied to claim 14**, Ito as modified by Macdonald and further modified by Kimura teaches the claimed invention except wherein: the pseudo-random noise phase delay range is determined within a predetermined range including a minimum value and a

maximum value of the pseudo-random noise phase delays of base stations in the base station set, and the pseudo-random noise strength is determined within a predetermined range including a minimum value and a maximum value of the pseudo-random noise strengths of base stations in the base station set.

However, in analogous art, Hunzinger teaches wherein: the pseudo-random noise phase delay range is determined within a predetermined range including a minimum value and a maximum value of the pseudo-random noise phase delays of base stations in the base station set(**e.g., see at least abstract and paragraphs 0005 and 0018-0020**), and the pseudo-random noise strength is determined within a predetermined range including a minimum value and a maximum value of the pseudo-random noise strengths of base stations in the base station set(**e.g., see at least abstract and paragraphs 0005 and 0018-0020**).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Ito as modified by Macdonald and further modified by Kimura to include wherein: the pseudo-random noise phase delay range is determined within a predetermined range including a minimum value and a maximum value of the pseudo-random noise phase delays of base stations in the base station set, and the pseudo-random noise strength is determined within a predetermined range including a minimum value and a maximum value of the pseudo-random noise strengths of base stations in the base station set for the purpose of determining position

Allowable Subject Matter

1. Claims **7 and 16** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHARLES SHEDRICK whose telephone number is (571)272-8621. The examiner can normally be reached on Monday thru Friday 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester Kincaid can be reached on (571)-272-7922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Charles Shedrick/
Examiner, Art Unit 2617

/Lester Kincaid/
Supervisory Patent Examiner, Art Unit 2617